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Emad Elsha

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City of Rockville
Boards and Commissions
Application of Expression of Interest

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2008 AUG -4 AM 10:51

Date: July 30, 2008

Board/Commission Interested In: Traffic and Transportation

Name: Jeremy I. Martin

Address: _____ Apt.# _____

Rockville Zip 20850

Home Phone: ( ) _____ Work Phone ( ) _____

E-Mail: jmartin@alumni.caltech.edu Fax: _____

Note: Work phone numbers are for staff use only.

Summary of Work Experience: Currently an analyst in the vehicles group at the Union of Concerned Scientists in DC. Previously made computer chips

Experience: I have lived and worked in many cities all over the U.S. and the world with very different transportation policies and infrastructure. This has always been an interest of mine.

Education/Training: Ph.D. in Chemistry & Chemical Engineering California Institute of Technology, BA Haverford College, Haverford PA

Volunteer Activities: Volunteered at Natural Resources Defense Council, Volunteered at Children's school

Professional Affiliations/Memberships: American Association for Advancement of Science, American Chemical Society, Materials Research Society

Please describe your interest in serving on this Board/Commission I am interested in transportation issues and in getting involved with local government.

Please indicate here [X] yes or [ ] no whether or not the City may give elected officials who serve Rockville (other than the Mayor and Council) your name and address. This information would not be used for any fund-raising, "issues" mailings or campaign mailings. No phone numbers will be given.

Please Return Form and Resume, if available, to: Mayor and Council
c/o City Clerk's Office
111 Maryland Avenue
Rockville, MD 20850
240-314-8280

Jeremy I. Martin, Ph. D.

jmartin@alumni.caltech.edu,

Education

Ph.D. California Institute of Technology, Pasadena, California 1992 – 1997
Chemistry and Chemical Engineering (Minor)
Dissertation: Statistical Mechanics of Polymers at Interfaces

B. A. Haverford College, Haverford, Pennsylvania 1986 – 1990
Chemistry and English Literature double major

Employment

Union of Concerned Scientists, Washington DC January 2008 – Present
Senior Analyst: Research and advocacy on transportation technology and policy, especially related to fuels

Advanced Micro Devices (AMD): Senior Member of Technical Staff 1997 – 2007
Sunnyvale, CA; Austin, TX; Hsin-Chu, Taiwan; East Fishkill, NY; Singapore
Responsibilities included research, development and manufacturing of cutting-edge computer chips at many premier semiconductor R&D labs and factories around the world.

Skills

Policy Analysis: Knowledgeable about Federal and California Transportation policy.

Media Outreach: Interact with the media as an expert on biofuel technology and public policy.

Quantitative Analysis, Computational and Statistical Methods: Experienced in the use of statistical, computational and simulation techniques to solve problems in science and engineering including Monte Carlo simulations, numerical methods, design of experiments for process optimization and statistical process control.

Innovation Life Cycle: In my 10 years at AMD I have been a direct contributor to all phases of the development of the current state of the art for advanced interconnects (called "Copper / Low k") from basic research to high volume manufacturing. I worked in the Silicon Valley with chemical companies and universities on the identification and optimization of new materials; with equipment companies on developing and refining their tools and processes; with industry consortia SEMATECH on benchmarking materials; with top research universities on characterizing the materials; integrated these new materials into new technology nodes at top industrial development labs such as Motorola's APRDL and IBM Research at Yorktown and East Fishkill; and finally implemented the technology nodes in high volume manufacturing at facilities in the US, Germany and Singapore.

Quantitative Analysis, Computational and Statistical Methods: Experienced in the use of statistical, computational and simulation techniques to solve problems in science and engineering including Monte Carlo simulations, numerical methods, design of experiments for process optimization and statistical process control.

Technology Partnerships: Worked directly in partnership with 8 of the leading semiconductor companies. This has given me valuable insight into different company cultures, different strategies for technology development and manufacturing, different approaches to intellectual property and different management styles.

Communication: Successful technology development and transfer as part of various multi-company partnerships required skilled and subtle communication tailored to varied audiences working for different companies located all over the world. In addition to frequent written and verbal status reports, I also prepared substantial "technology transfer reports," ran a weekly

international technology transfer meeting, and wrote publications for peer reviewed technical journals.

Teamwork and Organizational Adaptability: To work effectively as part of a diverse team in the factories of 5 companies in 4 countries, I learned how to adapt my approach to make the best use of available talent and resources.

Materials Science Research and Development: Developed new materials and manufacturing processes, especially "low k dielectrics," that enabled AMD to produce the most advanced high performance products and succeed in the fast paced and competitive microprocessor market.

Technical Management: Managed teams of up to 4 R&D engineers; recruited and hired experienced engineers and new college graduates; oversaw employee career development, goal setting, reviews and promotions; helped develop and run new engineer rotation program; and initiated a seminar series and other team-building events.

Technology Transfer: Led or participated in numerous technology transfers including: transfer of technology from pilot line development site in the US to manufacturing sites in Germany, Singapore and Taiwan and from one company to another; worked with SEMATECH to bring new technology from research to manufacturing; worked with top universities to apply advanced characterization techniques to commercially important materials.

International Collaboration: Worked in Singapore for 2 years and Taiwan for 6 months as part of a local technical team. This day to day collaboration as well as living among my peers there has given me an understanding of differences in values, educational systems, economic motivations, and cultural factors that influence how people work together, interact with management, and live their lives. I similarly worked closely over many years with German colleagues from AMD's plant in Dresden, making frequent extended trips there, managing two German assignees for 1 year rotations to the US, and becoming personally close to many more. This experience has given me a similar appreciation for German culture as it affects work and life outside work.

Manufacturing: Optimized various processes for manufacturing process margin, cost, and reliability. Supervised the highly successful transfer, qualification, yield and volume ramp for 90nm and 65nm products and technology at Chartered Semiconductor in Singapore.

Patents and Publications

13 U.S. Patents granted and more than 15 technical papers in technical journals and conference proceedings including International Interconnect Technology Conference, Materials Research Society, Applied Physics Letters, Advanced Metallization, Electrochemical Society, etc.